



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/596,574

06/16/2006

Michele Thomas

ESSR:117US/10607658

8007

32425 7590 08/03/2009  
FULBRIGHT & JAWORSKI L.L.P.  
600 CONGRESS AVE.  
SUITE 2400  
AUSTIN, TX 78701

EXAMINER

ROBINSON, LAUREN E

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

08/03/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,574	<b>Applicant(s)</b> THOMAS ET AL.	
	<b>Examiner</b> LAUREN ROBINSON	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/2007</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Group I in the reply filed on May 12, 2009 is acknowledged. The examiner notes that applicants have recited that the claims present in this group is claims 21-25 and 27-41, however, claim 41 is Group II. As applicants' recited previously within their remarks claim 41 being Group II, it appears that applicants listing 41 was a typographical error. Therefore, claim 41 has been withdrawn. The traversal is on the ground(s) that both groups share a common special technical feature and that there would be no serious burden. This is not found persuasive because the groups do not have a common technical feature as claim 21, which is present in both groups, was found in the prior art as provided previously as well as below. Additionally, the arguments regarding serious burden is not persuasive because the examiner notes that based on PCT practice, serious burden is not relevant.

For the above reasons, the requirement is still deemed proper and is therefore made FINAL. However, if applicants' elected claim(s) are in the future found allowable, the withdrawn process claim which depends from or otherwise require all the limitations of the allowable product claims will be considered for rejoinder.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 31-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 31-32 are rejected because it is unclear in claim 31 how many layers are being claimed. For instance, it is unclear whether the "at least 4 alternating HI/LI layers" is concerning 4 alternating HI/LI composite layers ( HI/LI...HI/LI...HI/LI...HI/LI), thereby corresponding to 8 individual layers (4 HI and 4 LI) or whether there is only 4 individual layers which are HI/LI alternating (HI/LI..HI/LI). As applicants' disclosure and claims never include an example, embodiment, etc. with 8 individual layers, the examiner believes the claim is regarding the latter choice above wherein only 4 individual layers needs to be found wherein the layers are Hi/LI alternating and the claim will be examined as such.

### ***Claim Rejections – 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 21-40 are rejected under 35 U.S.C. 103(a) as being obvious over Myli et al. (US Pub. No. 2006/0118408) in view of Scholz et al. (US PN. 6,040,053) and evidenced by Society of Vacuum Coaters (<http://www.svc.org/AboutSVC/Applications-of-Vacuum-Coating.cfm>).

Applicant cannot rely upon the foreign priority papers to overcome this rejection using Myli et al. because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

**Regarding claim 21:** Myli et al. teach an optical article comprising a transparent substrate (abstract, 0053-0055) having a main front and rear face with at least one of the faces having a multi-layer (Figures) antireflection coating (0061). The coating in one embodiment comprises at least two layers comprising titanium oxide (0078). Specifically, the coating comprises a stack of alternating layers of titanium oxide, which is well known in the art to have high index, and silicon oxide, which is known to have low index (0076-0078). Additionally, the layer of silicon oxide is taught to be applied with aluminum in an oxidizing environment (0077, 0086) and the examiner notes that this will produce a mixture of silicon oxide and aluminum oxide as would be recognized by one having ordinary skill. While the above is disclosed, the reference does not specifically disclose in the above embodiment that the titanium oxide layers are sub-stoichiometric or are visibly absorbing, the specific optical characteristic claimed for the titanium layers, or the substrate being made of one of the claimed materials.

**Consider the titanium oxide layers being sub-stoichiometric and visible absorbing**

While this limitation is not taught within the above specific embodiment, the reference does teach that using sub-stoichiometric titanium oxides can be used for providing high deposition rates (0111). From this, one having ordinary skill would recognize that substoichiometric titanium oxides would not only be an obvious material as Myli et al. illustrates the possibility of use but it would also be beneficial within the

Art Unit: 1794

above alternating layer embodiment if such deposition rates were desired. As such, it would have been obvious to one having ordinary skill in the art at the time of invention to modify Myli to include the substoichiometric titanium oxides within the titanium layers to obtain desired deposition rates. Additionally, the examiner notes that with such a modification, the titanium oxide layers are now the same as applicants' and therefore, would be applicants' "visibly absorbing" characteristic.

Consider the specific optical characteristic claimed for the titanium layers

Although the specific transmission characteristic as claimed is not disclosed by the reference, the examiner notes that it would be inherent. For example, as illustrated from the modification above, the same substoichiometric titanium dioxide layers claimed by applicants are being used within Myli. As this is what applicants' are illustrating as providing such a property, one having ordinary skill would reasonably expect the same property to be within Myli. Therefore, the claimed limitation would be inherent.

Consider the substrate being made of one of the claimed materials

While Myli discloses numerous substrates and applications, (plastics, glass, etc.) for use with their coating (0054-0056) to provide hydrophilicity (title) and does not disclose specifically organic glass, etc., the examiner notes that this would be obvious. First, although Myli lists numerous materials for use in windshields, car panels, etc., the substrate is not limited but only that it be transparent (0055). Secondly, according to applicants' disclosure (claim 25), their claimed "organic glass" corresponds to the above polycarbonate and it is well known in the art as shown in Scholz et al. that hydrophilic coatings are well desired on transparent substrates (plastic, glass, etc.) and preferably,

Art Unit: 1794

materials such as polycarbonate, which can be used for panels, windshields, etc (Col. 17, lines 25-45).

As both Myli and Scholz disclose analogous inventions related to hydrophilic coatings on plastic, glass, etc. substrates for the same overall applications and the material, etc. is not limited within Myli, one having ordinary skill would find it beneficial to include that the polycarbonate substrate of Scholz could be used as it is preferred in the related applications. Additionally, the examiner notes that and therefore, one having ordinary skill would find organic glass (polycarbonate) to be obvious. As such, it would have been obvious to one having ordinary skill in the art at the time of invention to modify Myli to include that the substrate can be organic glass (polycarbonate) in order to obtain a suitable hydrophilic article for applications such as windshield, car panels, etc. **(Claim 21)**.

**Regarding claims 22-23:** Further, while the applicants' claimed transmission and coefficient is not disclosed by Myli, this would also be inherent. For instance, these limitations as claimed are directly dependent on the claimed substoichiometric titanium oxide and since it is explained above that Myli, as modified, includes this, one having ordinary skill would reasonably expect the same properties to be therein **(Claims 22-23)**.

**Regarding claims 24-25:** As mentioned, Myli as modified includes that the substrate can be of organic glass made of polycarbonate **(Claims 24-25)**.

**Regarding claims 27-29:** Additionally, it was mentioned that the high index layers are the titanium oxide layers, which are now the substoichiometric visible absorbing layers

Art Unit: 1794

**(Claim 28)** and the silicon/aluminum oxide mixture layers are the low index layers

**(Claim 29)**. Also, as mentioned, the layers are alternating and the low index mixture layers are adjacent the high index substoichiometric titanium oxide ones (0076-0078)

**(Claim 27)**.

**Regarding claim 30:** It was discussed that aluminum oxide will be produced and as it is added in an oxidized environment, one having ordinary skill would expect the materials to be fully oxidized providing  $\text{Al}_2\text{O}_3$ . Also, the reference does not teach necessarily applicants' claimed amount of  $\text{Al}_2\text{O}_3$ , however the one would know that concentration of any constituent is result effective as adjusting such a parameter will change the physical properties. For example, Myli teaches that the additional of small amounts of aluminum changes the conductivity of the layer and one would know that during optimization of amount (% by weight), the conduction will change and through routine experimentation, desired conductivity can be obtained. As such, it would have been obvious to one having ordinary skill in the art at the time of invention to modify Myli et al. to include that the aluminum can be optimized to any value, including applicants', to provide desired physical results.

**Regarding claim 31:** Myli coating as illustrated in paragraphs 0076 and 0078 is comprised of at least four alternating high (titanium oxide) and low (silicon/aluminum oxide) layers **(Claim 31)**.

**Regarding claims 33-34:** Additionally, Myli teaches that when their taught substoichiometric titanium oxide is used it has the formula  $\text{TiO}_x$  wherein  $x$  is less than 2



**(Claim 33)** which overlaps applicants' claimed range providing a prima facie case of obviousness **(Claim 34)**. MPEP 2131.03

**Regarding claims 35-36:** The examiner notes that claims 35-36 and 41 are product by process claims. For example, claims 35-36 include limitations on how the substoichiometric titanium oxide is made (composition used). According to the MPEP, process limitations might limit the product but the patentability of the claims are based on the product itself and not the method of production. In the instant case, while applicants' specific composition is not disclosed within Myli, Myli is teaching applicants' substoichiometric titanium oxide as claimed, even more specifically applicants' disclosed  $\text{TiO}_x$  ( $x$  is less than 2) as well as depositing using vacuum evaporation (0109, 0110) and for this reason, the claims are unpatentable **(Claims 35-36)**.

**Regarding claim 37:** Also Myli illustrates that in addition to the at least two titanium oxide layers which are high index and alternated with low index silica/alumina mixtures (0078, 0086), a silica layer, which could also be mixed with aluminum (0078, 0086), is applied in between the substrate and the multilayer laminate and as evidenced by Society of Vacuum Coaters, both silica and alumina are known as wear materials which provide scratch resistance (Par. 17). Therefore, this layer will correspond to an anti-scratch coating as claimed **(Claim 37)**.

**Regarding claim 38:** Also, the reference discloses throughout that the alternating coating is number 40 within the illustrations and as shown in Figure 3, it is formed on a surface of the substrate. While Myli does not call one surface a rear surface, the term "rear" is relative and any surface will be considered a rear depending on what it is in

Art Unit: 1794

relation to. As such, the surface coated in the figure will meet applicants' rear limitation **(Claim 38)**.

**Regarding claim 39:** While Myli is not disclosing the article as an ophthalmic glass, the examiner notes that this would have also been obvious as illustrated by Scholz.

For instance, it was discussed above that both Myli and Scholz are using hydrophilic coatings on similar substrates for the same panel, windshield, etc. applications. Additionally, Scholz teaches that the hydrophilic coated substrates can be ophthalmic lenses as hydrophilicity, etc. is desired in such an application. From this, it would have been further obvious to modify Myli to include that the article can be an ophthalmic lens in order to obtain hydrophilic properties in such an application and also, the examiner notes that since the substrate is polycarbonate organic glass, this modification will correspond to ophthalmic glass **(Claim 39)**.

**Regarding claim 40:** The reference does not disclose applicants' specific transmission for the overall article, but Myli as modified include applicants' overall article and one having ordinary skill would reasonably expect all the properties to be the same. As such, applicants' claimed property would be expected to be inherent within Myli **(Claim 40)**.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ROBINSON whose telephone number is (571)270-3474. The examiner can normally be reached on Monday to Thursday 6am to 4pm.

Art Unit: 1794

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN ROBINSON/  
Examiner, Art Unit 1794

/Timothy M. Speer/  
Primary Examiner, Art Unit 1794